

REMARKS

The office action of April 27, 2006, has been carefully considered.

It is noted that the disclosure is objected to for containing various informalities.

Claims 1-15 are rejected under 35 U.S.C. 112, second paragraph.

Claims 1, 5-7, 9 and 12-15 are rejected under 35 U.S.C. 103(a) over DE 19843038 to Bender et al. in view of JP 11226625 to Miyaguchi.

Claims 2 and 4 are rejected under 35 U.S.C. 103(a) over Bender et al. and Miyaguchi, and further in view of the patent to Kamino et al.

Claim 3 is rejected under 35 U.S.C. 103(a) over Bender et al. and Miyaguchi, and further in view of JP 06-212278 to Nakada et al.

**HM-597**

Claim 8 is rejected under 35 U.S.C. 103(a) over Bender et al. and Miyaguchi, and further in view of the patent to Eguchi et al.

Claims 10 and 11 are rejected under 35 U.S.C. 103(a) over Bender et al. and Miyaguchi, and further in view of the patents to Groch and Schaming.

In connection with the Examiner's objection to the application, applicant has amended the specification to delete reference to claim numbers.

In view of these considerations it is respectfully submitted that the objection to the application is overcome and should be withdrawn.

In view of the Examiner's rejections of the claims, applicant has canceled claim 2, amended claims 1, 5, 7 and 8, and added new dependent claim 16.

It is respectfully submitted that the claims now on file particularly point out and distinctly claim the subject matter which applicant regards as the invention. Applicant has amended the claims to address the instances of indefiniteness cited by the

Examiner.

In view of these considerations it is respectfully submitted that the rejection of claims 1-15 under 35 U.S.C. 112, second paragraph is overcome and should be withdrawn.

It is respectfully submitted that the claims presently on file differ essentially and in an unobvious, highly advantageous manner from the constructions disclosed in the references.

Turning now to the references and particularly to the reference to Bender et al., it can be seen that this reference discloses an apparatus for cooling rolling stock within the mill train of a rolling mill, which apparatus has cooling girders directly positioned on an articulated pipe that pivots in a rotating bushing. The objective of Bender et al. is to improve the upper pivot group of a cooling arrangement. In Bender et al. there is also a lower cooling arrangement mentioned. The only mentions by Bender et al. of the lower cooling arrangement are at column 1, lines 6-8, column 1, lines 17-19, column 3, lines 13-17 and column 4, lines 33-35. At none of these locations is there any mention of spacing of the rollers of a roller table. There is no disclosure by Bender et al. of the arrangement cooling bars under the

rollers, as in the presently claimed invention.

Bender et al. do disclose spray jets between the rollers. However, they do not disclose spray tubes which are as small as possible so as to permit a small as possible spacing of the rollers. Bender et al. also do not disclose that the rollers have elongated pins of small diameter which permit the water which cannot run off through the tight space between the rollers to run off over the reduced diameter pins.

Miyaguchi discloses a cooling zone device in a hot rolling mill. Although Miyaguchi discloses a cooling zone, there is no mention of how this cooling zone functions. Furthermore, although the figures of Miyaguchi show rollers with elongated pins, there is no mention of why there is such a construction or what benefits the construction provides. There is discussion of the gap B between the rollers, but it is not clear if the discussion refers to the gap between the balls of the rollers or only the gap between the elongated pins, or the total gap. Since Miyaguchi does not discuss the reasons for providing a reduced diameter of the rollers, applicant submits that there is no motivation for reducing the diameter in device of another reference.

The Examiner combined Bender et al. with Miyaguchi in determining that claims 1, 5-7, 9 and 12-15 would be unpatentable over such a combination. Applicant respectfully submits that there is no motivation for combining the references as argued by the Examiner. Miyaguchi makes no mention of why the pins of the rollers are elongated and have a reduced diameter. Thus, one skilled in the art would have no motivation for using such a construction in the Bender et al. device when looking to improve the runoff of water. The only suggestion for making such a combination comes from the teachings of the present application. Furthermore, even if the references are combinable, the combination does not teach the invention as recited in the claims presently on file. Specifically, the combination does not teach a device in which the lower cooling bars are arranged below the spaces remaining between the rollers, wherein spray tubes of the cooling bars fit into these spaces; and the rollers of the roller table have elongated pins of small diameter, wherein the cooling bars have a pear-shaped cross section, whose neck is directed towards the spaces remaining between the rollers and is furnished with the spray tubes, as in the presently claimed invention.

In view of these considerations it is respectfully submitted that the rejection of claims 1, 5-7, 9 and 12-15 under 35 U.S.C.

103(a) over a combination of the above-discussed references is overcome and should be withdrawn.

The patent to Kamio et al. discloses an apparatus for continuously cooling heated metal plate.

The Examiner combined Kamio et al. with Bender et al. and Miyaguchi in determining that claims 2 and 4 would be unpatentable over such a combination. In Fig. 8, Kamio et al. show a cooling tube that appears to have an oval cross-section. However, this is a perspective view and therefore a round section will appear to be oval. The tube 6 of Fig. 8 is also shown in Fig. 2 from which it is evident that the tube has a round cross-section. Thus, Kamio et al. do not teach a cooling bar with a pear-shaped cross-section, as in the presently claimed invention. Furthermore, there is no teaching or discussion by Kamio et al. relative to a pear shaped cross-section of a cooling bar arranged beneath the rollers permitting the rollers to be as close together as possible. A combination of Kamio et al. with the other two references does not teach a device having the features recited in independent claim 1 presently on file.

In view of these considerations it is respectfully submitted

**HM-597**

that the rejection of claims 2 and 4 under 35 U.S.C. 103(a) over a combination of the above-discussed references is overcome and should be withdrawn.

The remaining references which were cited in various combinations with Bender et al. and Miyaguchi have also been considered. Applicant submits that none of these references add anything to the primary references so as to suggest the present invention as recited in the independent claim now on file and as discussed previously.

In view of these considerations it is respectfully submitted that the rejections of claims 3, 8, 10 and 11 under 35 U.S.C. 103(a) are overcome and should be withdrawn.

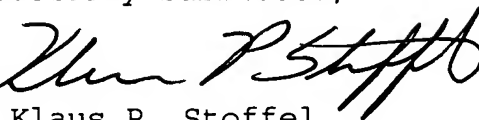
Reconsideration and allowance of the present application are respectfully requested.

Any additional fees or charges required at this time in connection with this application may be charged to Patent and Trademark Office Deposit Account No. 11-1835.

HM-597

Respectfully submitted,

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**CERTIFICATE OF MAILING**

I hereby certify that this correspondence is being deposited with the United States Postal Service as first class mail in an envelope addressed to: Commissioner for Patents, PO Box 1450 Alexandria, VA 22313-1450, on September 27, 2006.

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